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User's Manual

P310 i

User's Manual No. 980392-001 Rev. B

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FOREWORD

This manual contains installation and operation information for the P310*i* Series card printers manufactured by Zebra Technologies Corporation, Camarillo, California.

RETURN MATERIALS AUTHORIZATION

Before returning any equipment to Zebra Technologies Corporation for in-warranty or out-of-warranty repair, contact Repair Administration for a Return Materials Authorization (RMA) number. Repack the equipment in the original packing material and mark the RMA number clearly on the outside. Ship the equipment, freight prepaid, to the address listed below:

For USA, and Latin America
Zebra Technologies Corporation
Eltron Card Printer Products
1001 Flynn Road
Camarillo, CA. 93012-8706. USA
Phone: +1 (805) 579 1800
Fax: +1 (805) 579 1808
Toll Free in US: (800) 452-4056

For Europe, Asia and Pacific:
Zebra Technologies Corporation
Eltron Card Printer Products
Zone Industrielle, Rue d'Amsterdam
44370 Varades, France
phone: +33 (0) 240 097 070
Fax: +33 (0) 240 834 745

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TRADEMARKS

P310*i* is a service mark and Eltron is a registered trademark of Zebra Technologies Corporation. Windows and MS-DOS are registered trademarks of Microsoft Corp. All other marks are trademarks or registered trademarks of their respective holders.

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PRODUCT WARRANTY STATEMENT

Printers

All Eltron Card Printers are warranted against defects in material or workmanship for twelve (12) months from the purchase date.
Proof of purchase or shipment date is required to validate the warranty period. The warranty becomes void if the equipment is modified, improperly installed or used, damaged by accident or neglect, or if any parts are improperly installed or replaced by the user.

Note: Products returned must be packaged in the original or comparable packing and shipping container. In the event equipment is not so packaged, or if shipping damage is evident, it will not be accepted for service under warranty. Surface transportation charges for return to customers in the continental United States is paid by Zebra. Otherwise, Zebra pays CPT (carriage paid to) nearest airport, customer pays customers, duties, taxes, and freight from airport to destination. If Zebra determines that the product returned for warranty service or replacement is not defective as herein defined, the customer will pay all handling and transportation costs.

Printheads

Since printhead wear is part of normal operation, the original printhead is covered by a twelve (12) month warranty. Warranty period begins on purchase date.

To qualify for this warranty, the printhead must be returned to the factory or to an authorized service center. Customers are not required to purchase Zebra supplies (media and/or ribbons) for warranty qualification. However, if it is determined that the use of other manufacturer supplies has caused any defect in the printhead for which a warranty claim is made, the user is responsible for Zebra's labor and material charges required to repair the defect. The warranty becomes void if the printhead is physically worn or damaged; also if it is determined that failure to follow the preventive maintenance schedule listed in the User's Guide has causes defect in the thermal printhead for which a warranty claim is made.

Spare Parts

All parts, maintenance kits, options kits, and accessories are warranted to be free of defects in material and workmanship for 90 days (except where otherwise denoted) from date of purchase. This warranty become void if the item is modified, improperly installed or used, or damaged by accident or neglect.

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DECLARATIONS OF CONFORMITY

CE

European Council Directive		Compliance to Standards	
89/336/EEC modified by 92/31/EEC and 93/68/EEC	EMC Directive	EN 55022-B	RF Emissions control
	EMC Directive	EN 500082-1,1992	Immunity to Electromagnetic Disturbances
73/23/EEC modified by 93/68/EEC	Low voltage Directive	EN 60950	Product safety

FC

Model: P310*i* conforms to the following specification:
FCC Part 15, Subpart A, Section 15.107(a) and Section 15.109(a) Class B digital device

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses ans can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference's by one or more of the following measures:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and the receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.

The user may find the following booklet, prepared by the Federal Communications Commission, helpful:
How to identify and resolve Radio/TV Interference Problems. This booklet is available from the U.S. Government printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.
Use of a shielded cable is required to comply within Class B limits of Part 15 of FCC Rules.
Pursuant to Part 15.21 of the FCC Rules, any changes or modifications to this equipment not expressly approved by Eltron may cause, harmful interference and void the FCC authorization to operate this equipment.

INDUSTRY CANADA NOTICE

This device complies with Industry Canada ICS-003 class A requirements.

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INTRODUCTION

Thank you for choosing the Eltron P310*i* Plastic Card Printer.

These printers produce cards ideal for personalized identification, access control, visitor, membership, promotion and luggage card, badges and tags.

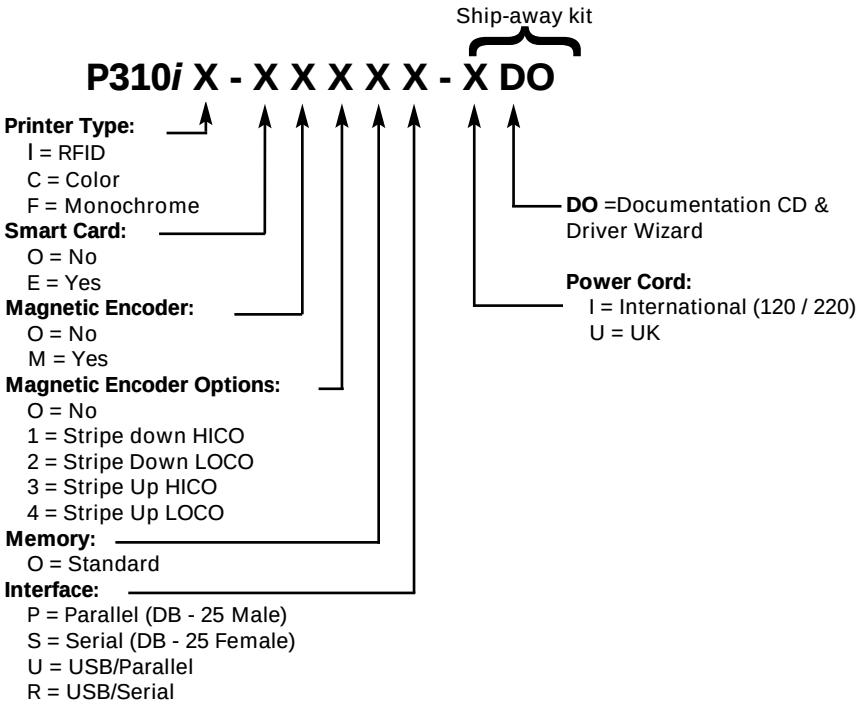
This manual guides you to an efficient start up and operation of your new Card Printer.

P310*i* PRINTER MODELS

Eltron's Product Numbers tell the story:

Here is a quick review of Eltron's Card Printer Series numbering and lettering system to help you.

Eltron's P310***i*** Plastic Card Printer Series employ Dye Sublimination and Resin Thermal Transfer Technologies. Model numbers include identifiers that specify options and items in the Ship-Away kits.



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1 GETTING STARTED

UNPACKING YOUR CARD PRINTER

Your P310*i* printer ships in a carton and protective anti-static bag. Keep all packing material in case you need to move or re-ship the printer.

While unpacking, inspect the carton to ensure that no damage occurred during shipping.

Please ensure that you have a clean and nearly dust free environment for proper operation and storage of the printer.

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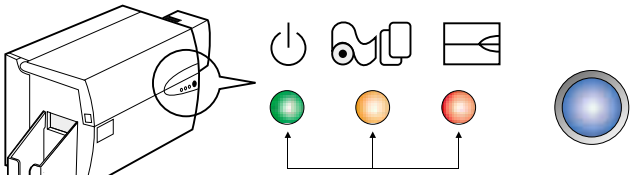
INDICATORS AND CONTROLS

Your P310i printer has three Status indicators and a panel button on the front and power switch on the rear :



INDICATORS (green, amber & red) signal printer activity by illuminating or flashing, a follows:

INDICATOR	ON	FLASHING
	POWER ON	PROCESSING
	LOAD CARDS	REPLACE RIBBON
	PRINTER ALERT REFER TO TROUBLESOOTING	ENCODER ALERT REFER TO TROUBLESOOTING

OTHER ALERTS

	AMBER & RED FLASHING	PRINTER CLEANING PROCESS REQUIRED
	ALL FLASHING	PRINT HEAD COOL DOWN MODE PRINTING WILL RESTART SHORTLY

PANEL BUTTON

This is a push button to operate the printer for:

- **CLEAN ERROR**
- **CLEANING PROCESS**

SEE CHAPTER 4

- **TEST CARD**

SEE CHAPTER 2

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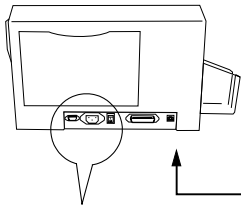
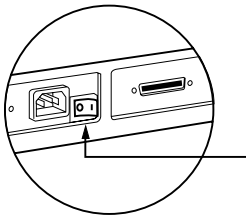
PRINTER INSTALLATION

The following will guide you through the installation of your P310i Printer.

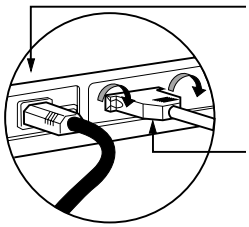
CAUTION: Limit AC power supplied to the P310i to 110 ~ 230 volts, 60 ~ 50 Hertz, for an associated 800 ~ 400 milliamps. Limit excess current draw to 16 amps or less, using an associated circuit breaker or other such device. Never operate the printer in a location where operator, computer, or printer can get wet. Personal injury could result. The electrical security of the printer is based on the reliability of the mains power source.



1. *Place the printer in a location that allows easy access to all sides. The printer should never be operated while resting on its side or upside down.*



2. *Place the printer's power swith in the OFF (0) position.*



3. *Insert the power cable into the printer power socket and attach to grounded electrical socket of the proper voltage and type.*

4. *Attach interface cable to printer and computer and then secure.*

5. *Switch power on.*

CAUTION: Intermittent or unpredictable operation may occur from unsecured connectors. If damaged, the power cable must be replaced by an exact equivalent.

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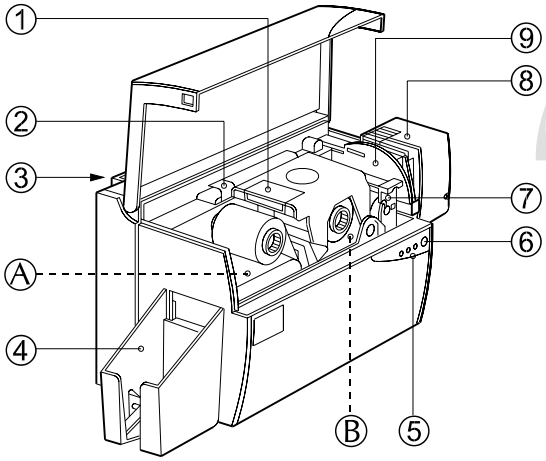
OPERATION

P 310i PRINTER FEATURES

The following shows the features found on your *P310i* Printer.



PLEASE NOTE: Any blue items inside the printer can be operated by the user.

STANDARD FEATURES

1. Print Head
2. Print Head Unlock Lever
3. Manual Holder
4. Card Output Hopper
5. Status Indicators
6. Panel Button
7. Card Cleaning Cartridge
8. Card Cartridge
9. Card Thickness Control

OPTIONAL FEATURES

A. Magnetic Encoding Station
B. Smart Card Contact Station

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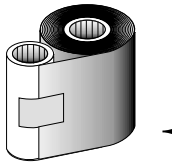
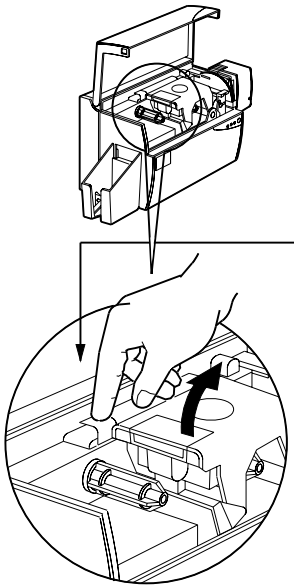
LOADING RIBBONS

"i Series"Printers requires the use of "i Series" ribbons for full color printing. The Resin Thermal Transfer and Dye Sublimation ribbons for P310i only are specifically designed for your P310i Printer. For optimum performance and printer life (Print Head), use True Colors ribbons.

DO NOT TOUCH the print head or the electronic components on the print head carriage. Discharges of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage the print head and other electronic components used in the device.



1. *Remove ribbon from packaging.*



2. *Open cover and press down on the print head unlock lever to open the print head carriage. The print head carriage will pop open.*

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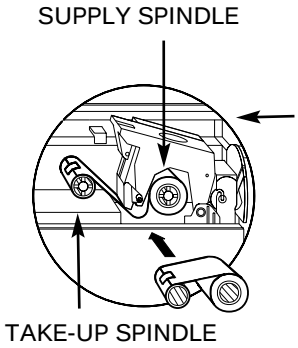
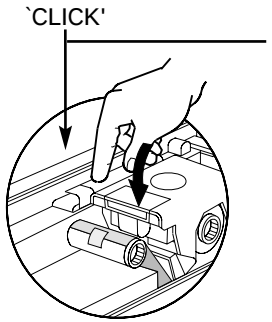


3. *Load ribbon onto the supply spindle (under print head carriage) and empty core (with tape attached) onto the take-up spindle flange side in. Make sure the ribbon comes off of the top of the supply spindle and feeds to the top of the take-up spindle.*



4. *Push down on the Print Head Lock Lever until an audible 'click' signals the locked-down position.*

5. *Close Cover.*

Please note that the ribbon automatically synchronizes whenever the print head lock down occurs.
The ribbon is simultaneously identified and the according parameters are automatically sent to the driver.

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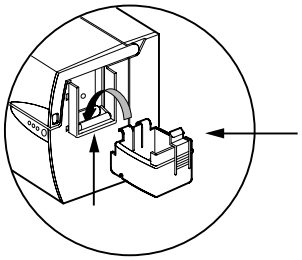
LOADING CARDS

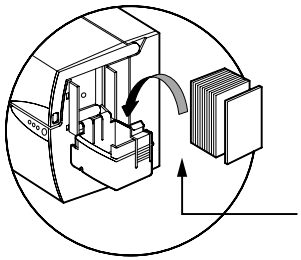
To help you load, print, and collect cards, the P310i is equiped with the following items:

***A* - CARD CARTRIDGE**

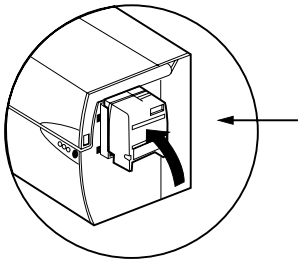
For loading cards.



1. *Install Card Cartridge by hooking onto printer as shown and clicking down.*



2. *Install cards into Cartridge.**



3. *Close Cartridge.*

DO NOT bend cards or touch print surfaces as this can reduce print quality. The surface of the cards must remain clean and dust free. Always store cards in an enclosed container. Ideally, use cards as soon as possible. If cards stick together, carefully shuffle them.

** See Chapter 6, Technical Specifications, for card requirements and capacities.*

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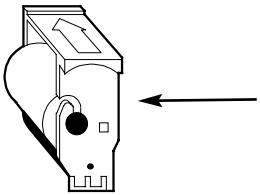
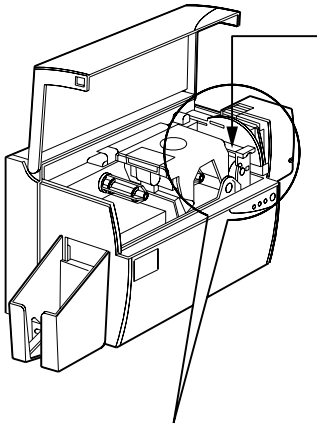
B - INSTALL CARD CLEANING CARTRIDGE

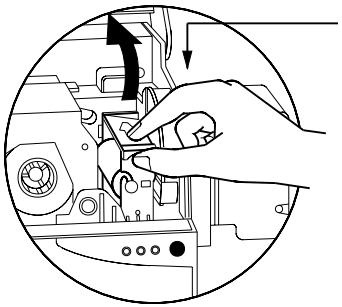
This item is used to clean the cards entering the printer.



1. *Remove Card Cleaning Cartridge from packaging.*
Peel protective wrapper from adhesive roller.



2. *Open Printer cover and remove the yellow reminder tape from the location for the Cleaning Cartridge.*



3. *Make sure the arrow on top of the assembly is facing toward the rear of the printer.*
Hook assembly into slot on printer and rotate down.
Ensure the assembly locks in place.

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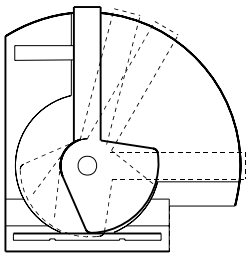
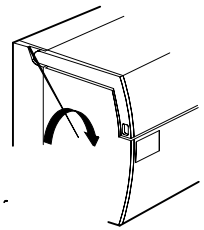
***C* - CARD THICKNESS CONTROL LEVER**

This item is operated by the user to prevent more than one card feeding into the printer at the same time and causing a jam.





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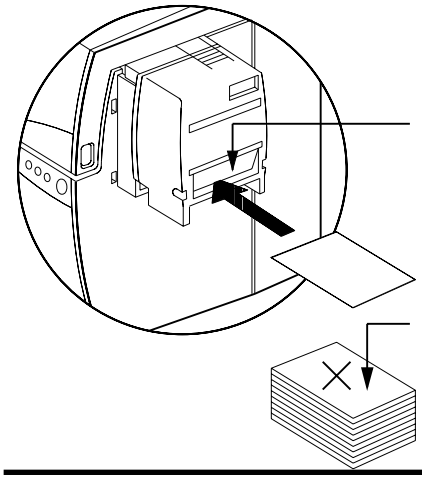
FEEDING ONE CARD AT A TIME

A Manual Feed Slot is available on the size of the Card Input Hopper for feeding single cards. Cleaning Cards are fed manually through this slot. The Card Cartridge must be empty for manual card feeding to work properly.

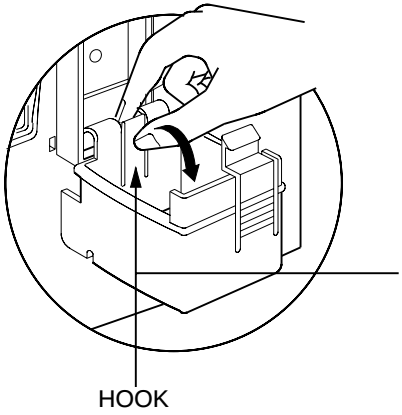


For one-at-a-time printing, feed cards through slots on side of Feeder.

Do not feed more than one card at a time.

REMOVING CARD CARTRIDGE

Remove the Card Cartridge prior to packaging the printer shipment.



To remove, pull hook back, and lift hopper out.

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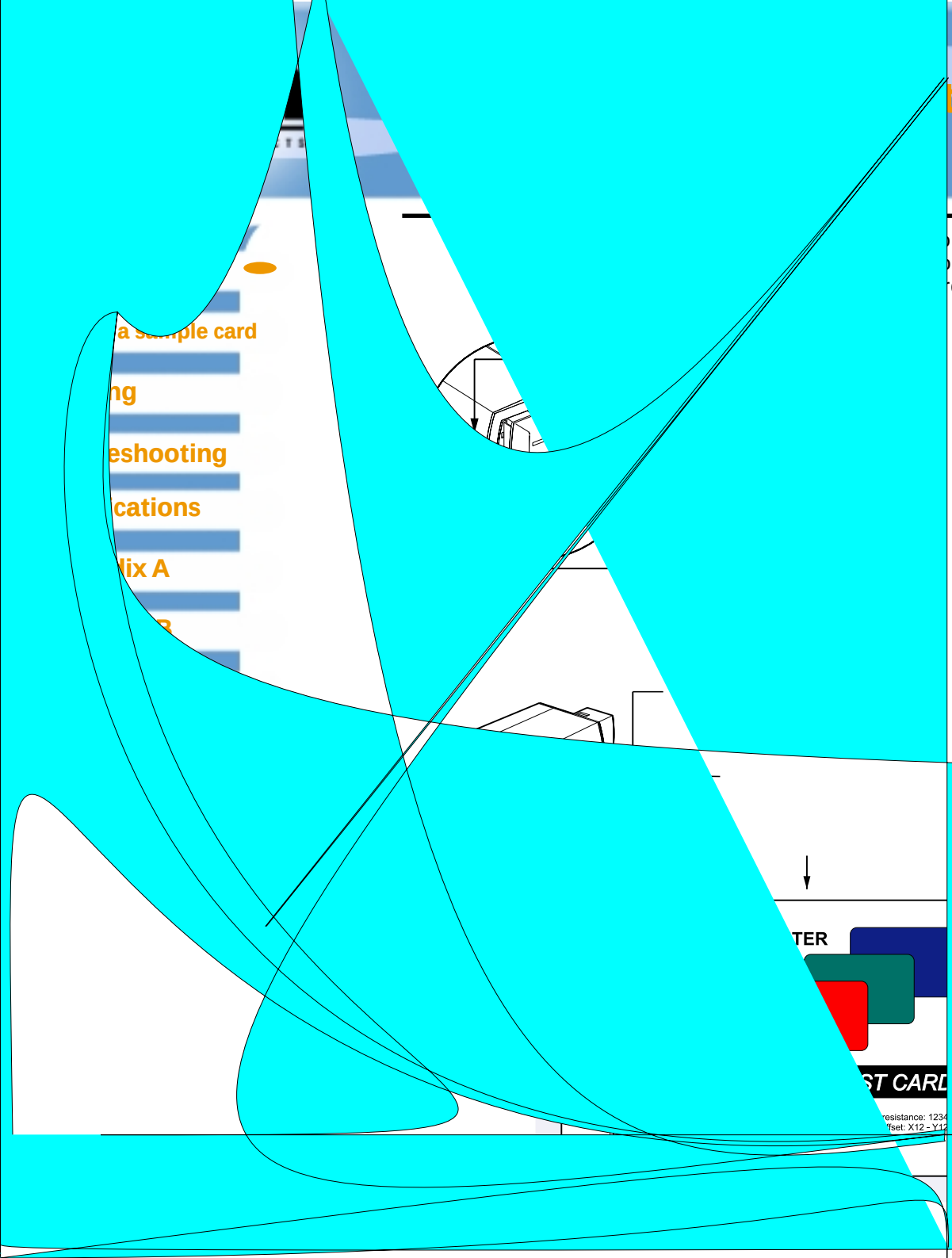

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PRINTING A SAMPLE CARD

Printing with the P310i Printer requires the Windows Printer Driver, your card design/issuing Windows software or printer command level programming through the printer interface.

The P310i Card Printer can be used with any Windows 95/98, Windows NT 4.0 or 2000 sotware application program, using the drivers provided with the printer.

This section contains information on the printing of a sample card in color (using the 5-panel color ribbon YMCKO) for P310*i* and the Windows Printer Driver.

BEFORE installing updated printer driver versions, always delete the existing printer driver version from your computer.

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To install the P310*i* Printer Driver Automatically on all Operating Systems, Use the Eltron Install Wizard

To ensure the accuracy of driver installation, it is recommended that you use the Eltron Install Wizard that is provided with your documentation CD.

The Wizard will:

a • Check to see which operating system you are using

b • Delete previous version of the driver and clean up any necessary Registry entries

c • From the main menu of your documentation CD, select your desired language and then select "DRIVERS" from the subsequent menu. The Install Wizard will walk you through the appropriate steps.

On NT systems, ensure that you have administrative privileges to perform this installation or contact your IT department.

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Set Printer Driver Options:

The P310i Printer screen appears. Change the options as follows:

On the **Printer** tab configure the magnetic encoder feature. If your printer is equipped with a magnetic Encoder Option, select **With Magnetic Encoder** option.

On the **Card** tab select card orientation:
Landscape or portrait - Select "**Landscape**".

For P310*i*: with i Series ribbon, the ribbon, the printer will automatically detect which ribbon is installed and configure the Windows driver accordingly.

In the Ribbon tab, go to **Black Panel** area and select **Text Only**. This option allows the text printing using the Black Resin Panel from the Color Ribbon.

Close the **Eltron P310i Printer Properties** screen.

Now that you have loaded media and set up the printer driver, the P310*ii* Printer is ready to print.

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Printing a sample card:

Follow the steps to print your first card

Go to the Microsoft Word Software.

If the printer was not selected as the default printer, go to the **File** menu and Select **Printer** and choose **Eltron P310i Card Printer** in the printer names list. Then **Close** the print dialog box.

Come back to **File** menu and choose **Page Setup**.

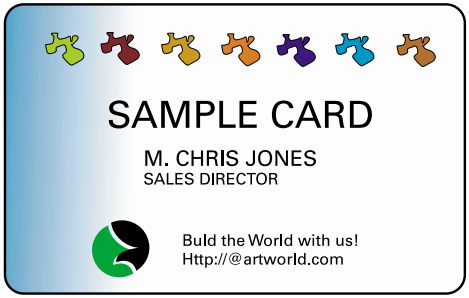
Select **Paper Size** tab and in **Paper Size** choose **Card**. Then select the orientation: "landscape".

Go to **Margins** tab, put the Top, Bottom, Left and Right margins with O values.

Press **OK** to close **Page Setup** window.

The card appears on the screen.

Design a card with both black and colored text and with colored pictures (see example below).



Once you are ready to print, go to **File** and point **Print**

The printer will feed in a card and start printing (the data download time will vary depending on the complexity of the card design and the processing speed of your computer).

Once the printing job is achieved the card is ejected from the printer.

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4 CLEANING

PROTECT YOUR FACTORY WARRANTY!

The recommended maintenance procedures must be performed to maintain your factory warranty. Other than the recommended cleaning procedures described in this manual, allow only Zebra authorized technicians to service the P310i Printer.

NEVER loosen, tighten, adjust, or bend, etc. a part or cable inside the printer.

NEVER use a shop air compressor to remove particles in the printer.

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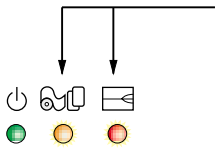
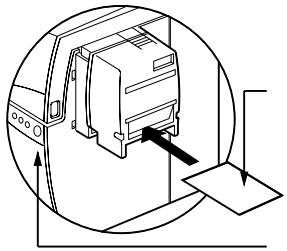
CLEANING SYSTEM

Your P310i Printer includes a simple cleaning system using the Pre-Saturated Cleaning Cards provided. The regular use of these cards will clean and maintain important parts of your printer: including the Print Head, and Transport Rollers and Magnetic Encoder Station (optional feature).

WHEN TO CLEAN

When the amber & red indicators flash.
(Every 1000 cards approx.)*
** Using 5-panel color ribbon (YMCKO).*
(Every 5000 cards approx.)*
** Using monochrome ribbon.*
**Optional factory setting.*





HOW TO CLEAN

1. *Leave power on.*
Open Cover and release Print Head Bracket to remove ribbon.
Close Print Head.
Close Cover. Remove cards from Card Cartridge.
2. *Insert one Pre-Saturated Cleaning Card (provided) through slot on the side of the Card Cartridge.*

3. *Press the Panel Button for a few seconds. The card will feed into printer and carry out the cleaning process. Repeat the process with a new Cleaning Card if necessary.*

Note: *For cleaning prior to the WHEN TO CLEAN signal, press the Panel Button for 3 seconds to start the cleaning process (Repeat first steps 1 & 2 above).*

Although the amber and red inducators will keep flashing until the cleaning process has been performed, the printer will continue to operate.

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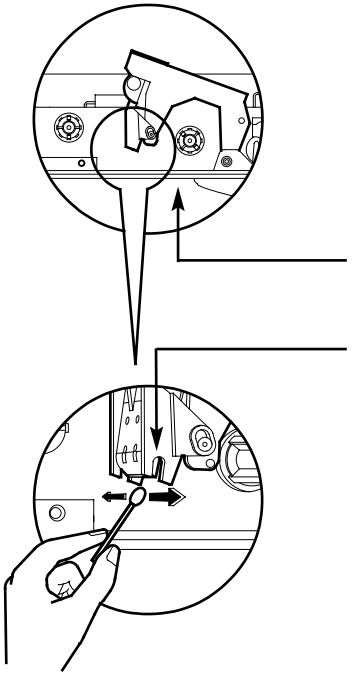
CLEANING THE PRINT HEAD

A cleaning using the Cleaning Cards usually suffices. However, a separate Print Head cleaning using swabs can remove more stubborn deposits when print anomalies persist. To avoid deposits, only use foam-tipped swabs.



1. *Turn power OFF. Raise Print Head and remove the Ribbon.*

2. *Clean Print Head by moving alcohol-moistened swab tip side-to-side across Print Head elements. Only use moderate force. (To reorder swabs see Appendix C).*

3. *Turn power ON. Allow two minutes for the print head components to dry before resume printing.*

Never use a sharp object to scrape deposites from the print head. Permanent damage will result.

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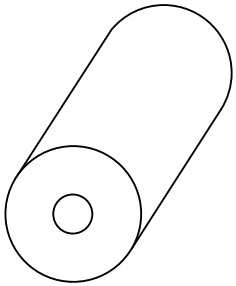
CARD CLEANING CARTRIDGE

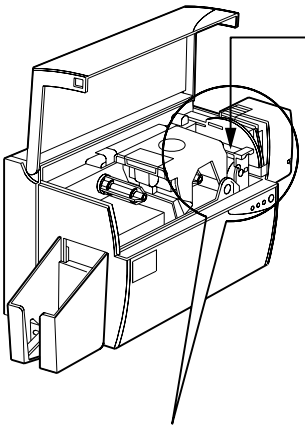


Your P310i Printer also has a Card Cleaning Cartridge. This item cleans the cards entering the printer. To ensure print quality, the cleaning roller requires periodic replacements.

WHEN TO MAINTAIN

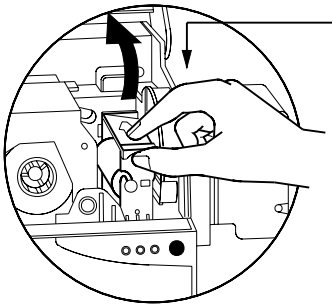
Replace the cleaning cartridge roller each time you install a new ribbon.A cleaning roller is included with every True Colors ribbons.

**If a cleaning card will be run, use the Cleaning Card before replacing adhesive Cleaning Roller.*



HOW TO MAINTAIN

1. *Open Cover and locate Cleaning Cartridge.*



2. *Gently remove by rotating up and away from printer.*

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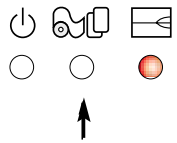
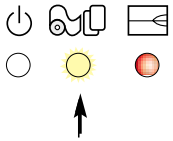
TROUBLESHOOTING

The following offers causes or solutions to symptoms related to improper operation. Check this table when experiencing any loss of operation or print quality. Note that the LEDs appear white for ON, dark for OFF, and circled with radial lines for FLASHING.

PROBLEMS / DESCRIPTION	REASON / SOLUTION
AMBER INDICATOR ILLUMINATES  **Alert: cards** *The printer stops and an error comes up in the Windows application program.*	1. Check for Cards in Cards Cartridge. 2. Check Card Thickness Control setting. 3. Press the Panel Button for 1 second. The printing job will restart.
AMBER INDICATOR FLASHES  **Alert: ribbon** *The printer stops and an error comes up in the Windows application program.*	1. Check ribbon. 2. Load new ribbon. 3. Ribbon will automatically synchronize and printing will restart with new card

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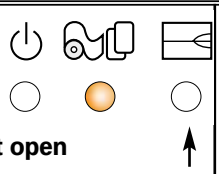
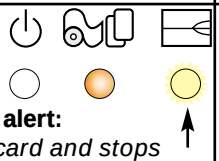
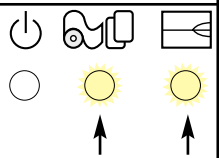
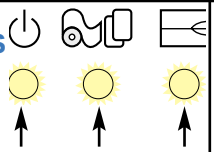
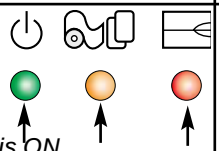
RED INDICATOR ILLUMINATES  **Printer alert:** **Print Head Bracket open** **Card Jam** **Ribbon Jam** **Command Error** *The printer stops working.*	1. Check Print Head Bracket is closed. 2. Check if you are using correct card type (see Technical Specifications). 3. Check Card Thickness Control Lever is properly adjusted for correct card thickness (see Chapter 2 - Loading Cards) 4. If two cards are fed into printer at same time: - Open cover & remove Card Cleaning Cartridge, empty feeder, pull jammed cards out. Replace Card Cleaning Cartridge. - remove cards from Card Cartridge, shuffle them and replace. 5. Check ribbon is loaded correctly inside printer. 6. Check command.
RED INDICATOR FLASHES  **Magnetic Encoder alert:** *The printer ejects card and stops*	1. Check that you are using correct magnetic card type (for low or high corcivity encoding). 2. Verify Command Syntax. 3. Call technical support.
AMBER & RED INDICATORS FLASH  **Cleaning alert:** *The printer needs cleaning*	1. Printer cleaning required (see Chapter 4 - Cleaning)
ALL INDICATORS FLASH  **Print Head alert:** **Cool down mode** *Printing stops*	1. Printing will restart automatically after a few seconds.
NO INDICATOR ILLUMINATES  **Power cord:** *The power switch is ON*	1. Make sure power cord is plugged in properly at both ends. 2. Call technical support.

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CARDS HAVE 'SCRATCH LINES' MISSING PRINTING **Incorrect rolled ribon** **Dust** **Print Head** *There are non-printed horizontal lines (white) on card surfaces.*	1. In correct position of ribbon. Check ribbon is properly rolled onto the ribbon core and there are no pleats. 2. There may be dust on the print head (see Chapter 4 - Cleaning). 3. An element on the print headmay be scratched or burnt. Contact technical support for print head replacement information.
POOR PRINTING QUALITY **Dust on the print head.** **Contrast & Intensty values for P310*i*:** *Printing shows very pale or inconsistent results.*	1. There may be dust or embedded contaminations on elements of the print head (see Chapter 4 - Cleaning). 2. Contrast and/or intensity colors for P310*i* may be set to high values for P310*i* in software or with programming.
PRINTING HAS VOIDS **Dust inside printer** **Contamination on card surfaces** *Small pots on the printed card with a non-printed area or a different printed color.*	1. This may be caused by dust inside the printer and/or a dirty Cleaning Roller Assembly (see Chapter 4 - Cleaning). 2. This may be caused by contamination on the card surface. Check that cards are stored in a dust free environment.

Ribbon Errors: Check that the print ribbon has not 'run out'. Lock and then unlock the print head assembly; this resynchronises the ribbon automatically. When using a color ribbon, it should advance automatically so that the leading edge of the Yellow panel is beneath the print head. Ensure that the correct ribbon type has been specified in the Windows driver.

Card Feed & Mechanical Errors: Ensure that the card thickness adjustment has been set-up correctly to allow one card to feed.

Magnetic Encoding Errors: Check that the cards are inserted correctly in the printer. Ensure that the cards are low or high coercivity as required, and are set-up correctly in the printer driver (Appendix A).

Cleaning Alert: The printer has counted the number of cards printed and has automatically flagged that a cleaning routine needs to be carried out.

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TECHNICAL SPECIFICATIONS

General

- High speed printing, over 140 cards/hour edge to edge in full color (YMCKO) throughput
- High speed printing, over 1000 cards/hour throughput (K-resin ribbon)
- Small footprint
- Windows Drivers for 95/98 and NT 4.0 / 2000
- One year printer warranty
- One year (unlimited passes) print head warranty
- Powerful EPCL (Eltron Printer Program Command Langage)

Colour Printing

- Color dye sublimation or monochrome thermal transfer printing
- 25 seconds per card edge to edge in full color (YMCKO)
- 4 seconds in monochrome
- 300 dpi (11.8 dots/mm) print resolution
- Edge to edge printing standard

Bar Codes

- Code 39
- Code 128 B & C with & without check digit
- 2 of 5 & 2 of 5 industrial
- UPCA
- EAN8 & EAN13
- PDF 417 2D bar code and other symbologies available (Not resident in printer)

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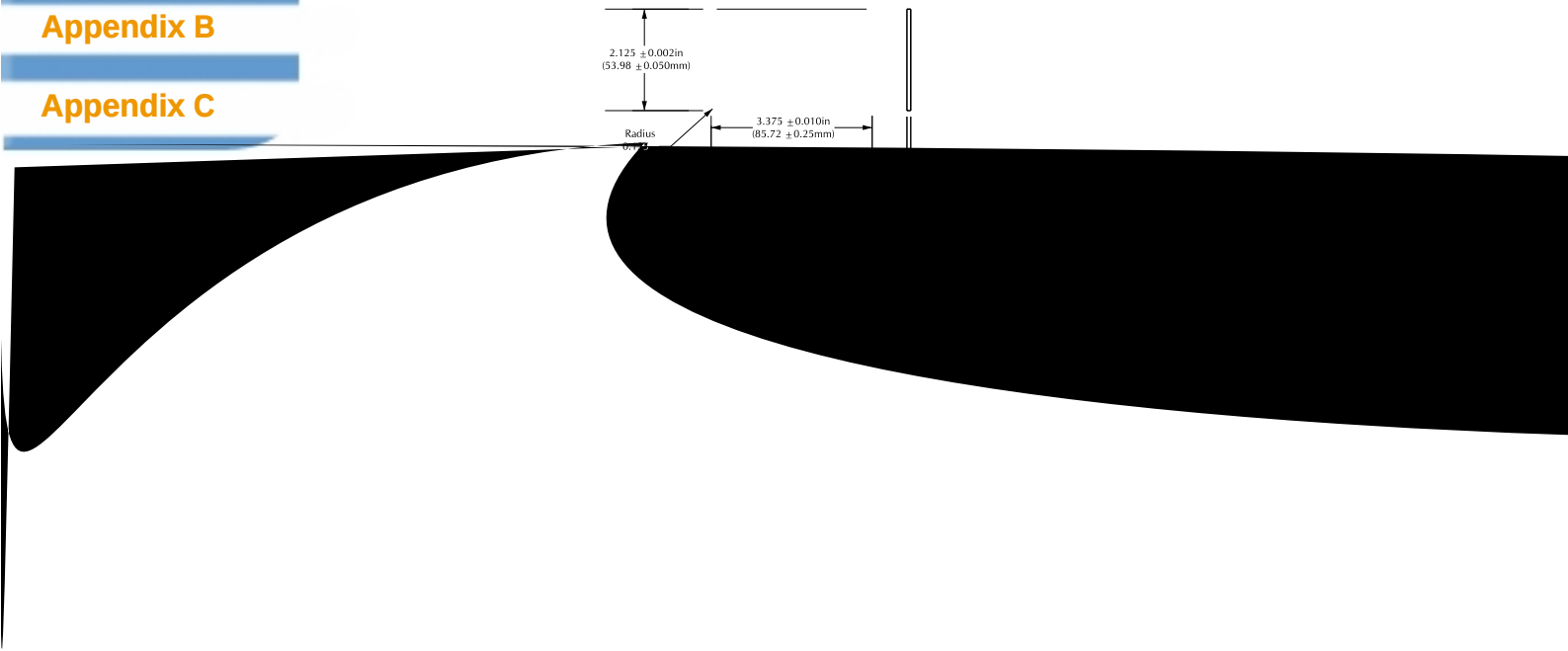

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*Ribbons**

- Monochrome: 1500 cards/roll
- Monochrome colors: black, red, blue, green, silver, gold, white.

For P310*i* only

- K-resin + O: 800 cards/roll
- K-dye + O: 800 cards/roll
- YMCKO: 350 cards/roll

Overlay varnish

- Thermal transfer
- 4 microns thick
- Clear and holographic options:
  - Clear
  - Genuine/Secure Hologram
  - Pcard hologram
  - Custom Hologram

Interfaces

- Parallel Standard (cable included)
- RS-232C Serial (Option)
- USB (Optional)

Mechanical

- Width: 11.8" (315 mm†)
- Depth: 7.75" (198mm†)
- Height: 8.7" (220 mm†)
- Weight: 13.4 lbs (6.1 kg)

Electrical

- 110 ~ 230 Volts AC, 60 ~ 50 Hz
- FCC Class A, CE, UL, and CUL approved

Environmental

- Operating Temperature: 60 to 86°F (15 to 30°C)
- Operating Humidity: 20 to 65% non condensing
- Storage Temperature: -23 to 158°F (-5 to 70°C)
- Storage Humidity: 20 to 70% non condensing
- Ventilation: Free air

* Thermal transfer (Resin) ribbons offer more durability than dye sublimation, with greater resistance to scratches and UV-induced fading.

Dye Sublimation printing requires dye sublimation ribbons, with either black or cyan, magenta, and yellow (plus black resin) panels.

† Measured without card output hopper.

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Options

- USB port
- RS-232C serial port
- Smart Card Contact Station (30 mil cards only)
- Magnetic Encoder (30 mil cards only)
- Cleaning supplies
- Service Manual

"i Series" Printers requires the use of "i Series" ribbons for full color printing

Refer to the Appendix C for more information about Card and Ribbon Media availaible from Zebra Technologies Corp.

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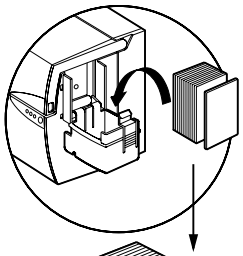
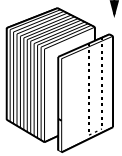
APPENDIX A - MAGNETIC CARD STRIPE ENCODER

Operation and maintenance requirements for the P310i Printer with the optional magnetic card stripe encoder.
(See Chapter 2 for location).
The magnetic encoder can be set for either high or low coercivity.



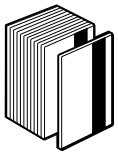
The magnetic encoder is a factory installed item with the read/write head positioned below the card path, available with HICO encoding or LOCO encoding.



STRIPE DOWN

When loading cards into the Card Cartridge, please ensure that the magnetic stripe is facing towards the printer and closest to the rear.

Also available are Printer models with the Magnetic Read/Write head positioned above the card path, with HICO encoding or LOCO encoding.



STRIPE UP

When loading cards, please ensure that there is a magnetic stripe.

Approved HICO & LOCO PVC Cards are available. (See Appendix C).

SAMPLE ENCODING PROGRAM
Refer to Programmer's manual (Part number 98001-001)

ONLY USE cards that comply with ISO 7810 & 7811 standards for magnetic stripe cards. The magnetic stripe must be flush to the surface of the card to work properly. Never use taped-on magnetic stripes.

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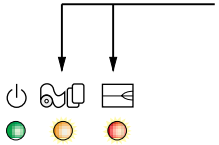
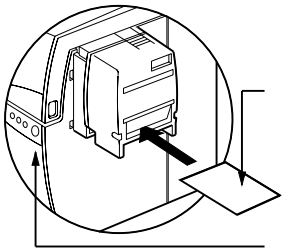
MAGNETIC ENCODER CLEANING

The read/write head requires periodic cleaning to maintain errorfree encoding.



WHEN TO CLEAN

When the amber & red indicators flash.
(Every 1000 cards approx.)*
** Using 5-panel color ribbon (YMCKO).*
**Optional factory setting.*



HOW TO CLEAN

1. *Leave power on.*
Open Cover and release Print Head Bracket to remove ribbon.
Close Print Head.
Close Cover. Remove cards from Card Cartridge.

2. *Insert one Pre-Saturated Cleaning Card (provided) through slot on the side of the Card Cartridge.*

3. *Press the Panel Button for a few seconds. The card will feed into printer and carry out the cleaning process. Repeat the process with a new Cleaning Card if necessary.*

Note: *For cleaning prior to the WHEN TO CLEAN signal, press the Panel Button for 3 seconds to start the cleaning process (Repeat first steps 1 & 2 above).*

Although the amber and red inducators will keep flashing until the cleaning process has been performed, the printer will continue to operate.

ISO STANDARD ENCODING

Track #	Field Separator	Track density	Valid Characters	# of characters
1	^	210 BPI*	Alphanumeric (ASCII 20~95†)	79‡
2	=	75 BPI*	Numeric (ASCII 48~62)	40‡
3	=	210 BPI*	Numeric (ASCII 48~62)	107‡

* Bit per inch
† Except the '?' character
‡ Including Start, Stop and LCR characters. Also note that these 3 characters are automatically managed by the magnetic encoder according to the ISO Standard Norms.

NOTE: Refer to the Card Printer Programmer's Manual for complete programming information.

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APPENDIX B - SMART CARD CONTACT STATION

This section contains information on the additional operations of the P310i Printers with Smart Card Contact Stations. (See Chapter 2 for location.)

INTRODUCTION

Smart Cards can have a built-in microcomputer and a battery. Card Memory can store fingerprints, voice recognition patterns, medical records and other such data. The P310i printer may be equipped with an optional contact station for programming Smart Cards (ISO 7816). This printer model responds to commands that position the cards at the contact station, where the printer connects to the contacts on the Smart Cards. All other printer operations remain the same as the standard P310i model.

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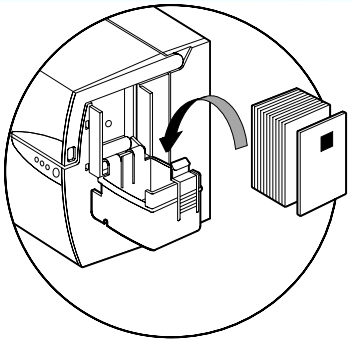
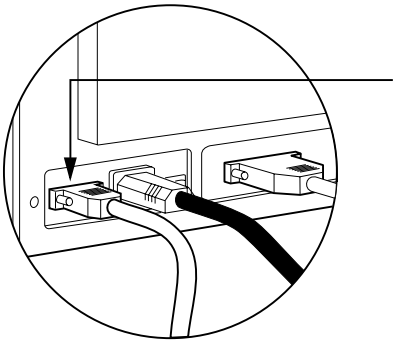


MEDIA LOADING ORIENTATION

Orient the cards with the Smart Card Chip at the top of the card and facing away from the printer.

SMART CARD CONTACT STATION INTERFACE



When a command to the parallel printer interface sends a card to the Smart Card Contact Station, the printer connects the Smart Card Contact Station to the female DB-9 connector on the rear of the printer.

An attached external Smart Card Programmer can be used to program Smart Card chips.

DO NOT position printing over the Smart Card Chip.

DB - 9 PINS	SMART CARD CONTACT POINTS	DB - 9 PINS	SMART CARD CONTACT POINTS
1	CI (VCC)	6	C6 (Vpp)
2	C2 (Reset)	7	C7 (I/O)
3	C3 (Clock)	8	C8 (RFU)
4	C4 (RFU)	9	(GND when chip is at station)
5	C5 (GND)		

Refer to the Card Printer Programmer's Manual for complete programming information.

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APPENDIX C - ACCESSORIES & SUPPLIES

Please contact your Zebra-authorized dealer to place an order for accessories and suplies.

RIBBONS

The following ribbons may be used in the P310i Printer:

Monochrome Resin Ribbons (Sold by the Roll)

Part Number	Description	
800015-401	Black	1000 images
800015-402	Red	1000 images
800015-403	Green	1000 images
800015-404	Blue	1000 images
800015-406	Gold	1000 images
800015-407	Silver	1000 images
800015-409	White	1000 images
800015-485	Scratch-off Grey	840 images

Color Ribbons (Sold by the Roll)

Part Number	Description	
800015-440	5-Panel Color Ribbon (YMCKO)	200 images
800015-540	5-Panel Color Ribbon (YMCKO)	330 images
800015-445	4-Panel Color Ribbon (YMCK)	250 images
800015-545	4-Panel Color Ribbon (YMCK)	400 images
800015-480	5-Panel Color Ribbon (YMCKK)	200 images
800015-470	3-Panel Color Ribbon (YMC)	300 images
800015-448	6-Panel Color Ribbon (YMCKOK)	170 images
800015-450	2-Panel Black Ribbon (K Dye + O)	500 images
800015-460	2-Panel Resin Ribbon (K Resin + O)	500 images

Note:
Y = Yellow, M = Magenta, C = Cyan, K = black, O = Overlay

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CARDS

The following cards are optimized for use in the P310i Printers:

Blank White Cards (Sold by the box)		
Part Number	Description	
	Premier Grade PVC	
104523-114	Card, 10 mil †	(5 packs of 200)
104523-010	Card, 10 mil † adhesive back	(5 packs of 200)
104523-111	Card, 30 mil †	(5 packs of 100)
104523-112	Card, 30 mil -low coercivity Mag. Stripe	(5 packs of 100)
104523-113	Card, 30 mil -High coercivity Mag. Stripe	(5 packs of 100)
	Premier Plus Grade (PVC composite 60/40)	
104524-101	Card, 30 mil	(5 packs of 100)
104524-102	Card, 30 mil -low coercivity Mag. Stripe	(5 packs of 100)
104524-103	Card, 30 mil -High coercivity Mag. Stripe	(5 packs of 100)

Notes :
10mil = 0.254mm;30 mil = 0.762mm
10mil cards are recommended for single side printing monochrome and spot Color only.

Many other card types are also available; ask your dealer for more information.

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ACCESSORIES

Accessories available for P310i Printers appear below. Always refer to the part number when placing an order:

Printer Supplies	
Part Number	Description
105909-138	Card Printer parallel / Serial Interface Cable, ft (DB-25 male to DB-25 female)
105912-024	Card Cartridge
105912-038	Card Output Hopper
105909-112	Replacement Print Head Kit

Cleaning Supplies	
Part Number	Description
105909-169	Premier Cleaning Kit (25 swabs, 50 cards)
105912-003	Adhesive Cleaning Roller Kit (set of 5)
105912-002	Cleaning Cartridge, complete
104531-001	Cleaning Card Kit (box of 100 cards)
105909-057	Cleaning Swab Kit (box of 25 swabs)

Documentation	
Part Number	Description
980081-001	Pseries Programmer's Manual (English only)
980264-001	P310i Maintenance Manual (English only)

Miscellaneous	
Part Number	Description
105576-003	CD ROM with Windows Driver Wizard and User's manuals in English, French,Spanish, German, Portuguese, Italian, Chinese, japonese.
806503-001	Card Punch (slots card for lapel clip)
104527-001	Lapel Clips (pack of 100 clips)

Getting started
Operation
Printing a sample card
Cleaning
Troubleshooting
Specifications
Appendix A
Appendix B
Appendix C

World Wide Sales and Support:

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